

Complete Summary

GUIDELINE TITLE

Parameter on placement and management of the dental implant.

BIBLIOGRAPHIC SOURCE(S)

American Academy of Periodontology. Parameter on placement and management of the dental implant. J Periodontol 2000 May; 71 (5 Suppl):870-2. [20 references]

COMPLETE SUMMARY CONTENT

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SCOPE

DISEASE/CONDITION(S)

Missing teeth

GUIDELINE CATEGORY

Assessment of Therapeutic Effectiveness
Evaluation
Management
Treatment

CLINICAL SPECIALTY

Dentistry

INTENDED USERS

Dentists

GUIDELINE OBJECTIVE(S)

To provide a parameter on the placement and management of dental implants.

TARGET POPULATION

Individuals choosing dental implant for the replacement of missing teeth.

INTERVENTIONS AND PRACTICES CONSIDERED

1. Pretreatment evaluation including:
 - a. Oral health status
 - b. Medical and psychological status
 - c. Patient motivation/ability to provide home care
 - d. Patient expectations of therapy outcome
 - e. The various habits and conditions which may place the patient at higher risk for implant failure; e.g., smoking, bruxism, periodontal disease and radiation therapy
 - f. Periodontal and restorative status of the remaining dentition
2. Diagnostic aids including: diagnostic casts, mounted or mountable; Imaging techniques; and surgical template
3. Implant placement including:
 - a. Number and location of missing teeth
 - b. Interarch distance
 - c. Number, type, and location of implants to be placed
 - d. Existing and proposed occlusal scheme
 - e. Design of planned restoration
4. Surgical procedures
 - a. Aseptic technique
 - b. Appropriate surgical protocol
 - c. Surgical template utilization
 - d. Appropriate postoperative instructions
5. Post-placement procedures
6. Implant management
7. Management of implant-related complications

MAJOR OUTCOMES CONSIDERED

1. Efficacy of therapy to maintain a stable, functional, esthetically acceptable tooth replacement
2. Complication rates, including:
 - Implant mobility or loss
 - Pain and/or loss of function
 - Bone loss
 - Peri-implant radiolucency
 - Inflammation/infection
 - Probing depth
 - Implant fracture

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not applicable

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Approved by the Board of Trustees, American Academy of Periodontology,
May 1998.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Therapeutic Goal

The therapeutic goal of implant therapy is to support restorations that replace a tooth or missing teeth so as to provide comfort, function, and esthetics.

Pretreatment Considerations

The periodontist and other members of the dental team often share the responsibility of evaluating the patient for implants. A systematic and coordinated plan delineating the responsibilities of each member of the team should be developed and followed. Treatment considerations for implant patients should include an evaluation of:

1. Oral health status
2. Medical and psychological status
3. Patient motivation/ability to provide home care
4. Patient expectations of therapy outcome
5. The various habits and conditions which may place the patient at higher risk for implant failure; e.g., alcoholism, smoking, high American Society of Anesthesiology (ASA) score, bruxism, periodontal disease and radiation therapy
6. Periodontal and restorative status of the remaining dentition

Surgical considerations for patients requiring implant placement should include evaluation of anatomy and location of: vital structures, bone quality, quantity and contour, and soft tissues.

The following diagnostic aids may be utilized in presurgical considerations to assist in determining the number, location, type, and angulation of the implants and abutments:

1. Diagnostic casts, mounted or mountable
2. Imaging techniques
3. Surgical template

Implant Placement

Prosthetic considerations for patients requiring implant placement should include evaluation of:

1. Number and location of missing teeth
2. Interarch distance
3. Number, type, and location of implants to be placed
4. Existing and proposed occlusal scheme
5. Design of planned restoration

The surgical technique is based on the pretreatment evaluation and on the type of implant to be utilized. The following also should be considered:

1. Aseptic technique
2. Appropriate surgical protocol
3. Surgical template utilization
4. Appropriate postoperative instructions

A staged approach has been used to place endosseous implants. Implants can be placed at the time of tooth extraction as well.

Post-placement procedures: The following considerations should be reviewed prior to the restorative phase:

1. Quantity, quality, and health of soft and hard tissues
2. Implant stability
3. Implant position and abutment selection
4. Oral hygiene assessment

Appropriate restorative procedures may be initiated upon satisfactory completion of the above considerations. Mechanical failures of both the implant components and prosthetic superstructures have been associated with occlusal overload.

Implant Management

Periodic evaluation of implants, surrounding tissues and oral hygiene are vital to the long-term success of the dental implant. Considerations in the evaluation of the implant are:

1. Presence of plaque/calculus
2. Clinical appearance of peri-implant tissues
3. Radiographic appearances of implant and peri-implant structures
4. Occlusal status, stability of prostheses and implants
5. Probing depths
6. Presence of exudate or bleeding on probing
7. Modification of maintenance interval (see Parameter on Periodontal Maintenance)
8. Patient comfort and function

Management of Implant-Related Complications

The etiology of implant complications can be multi-factorial, involving both structural components and tissue considerations. Routine evaluation may reveal the need for procedures to correct the following:

1. Prosthesis instability
2. Fixture mobility
3. Occlusal traumatism
4. Fractured or loosened components
5. Inflammation/infection
6. Excessive/progressive loss of hard and soft tissues

7. Pain
8. Neuropathy/paresthesia

An unfavorable response to corrective procedures may warrant adjustment of the prostheses and/or removal of the implants.

Outcomes Assessment

The desired outcome of successful implant therapy is maintenance of a stable, functional, esthetically acceptable tooth replacement for the patient.

Variations from the desired outcome of implant placement include:

1. Implant mobility or loss
2. Persistent pain and/or loss of function
3. Progressive bone loss
4. Persistent peri-implant radiolucency
5. Persistent uncontrolled inflammation/infection
6. Inability to restore the implant
7. Increased probing depths
8. Implant fracture

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Restored chewing function
- Improved esthetics
- Improved dental comfort

POTENTIAL HARMS

Implant-related complications, including

- Prosthesis instability
- Fixture mobility
- Occlusal traumatism
- Fractured or loosened components
- Inflammation/infection

- Excessive/progressive loss of hard and soft tissues
- Pain
- Neuropathy/paresthesia

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

1. Each parameter should be considered in its entirety. It should be recognized that adherence to any parameter will not obviate all complications or post-care problems in periodontal therapy. A parameter should not be deemed inclusive of all methods of care or exclusive of treatment appropriately directed to obtain the same results. It should also be noted that these parameters summarize patient evaluation and treatment procedures which have been presented in more detail in the medical and dental literature.
2. It is important to emphasize that the final judgment regarding the care for any given patient must be determined by the dentist. The fact that dental treatment varies from a practice parameter does not of itself establish that a dentist has not met the required standard of care. Ultimately, it is the dentist who must determine the appropriate course of treatment to provide a reasonable outcome for the patient. It is the dentist, together with the patient, who has the final responsibility for making decisions about therapeutic options.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

American Academy of Periodontology. Parameter on placement and management of the dental implant. J Periodontol 2000 May; 71 (5 Suppl):870-2. [20 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1996 Oct (revised 2000 May)

GUIDELINE DEVELOPER(S)

American Academy of Periodontology - Professional Association

SOURCE(S) OF FUNDING

American Academy of Periodontology

GUIDELINE COMMITTEE

Ad Hoc Committee on Parameters of Care

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Members: Donald A. Adams; Erwin P. Barrington (Chair); Jack Caton, Jr.; Robert J. Genco; Stephen F. Goodman; Carole N. Hildebrand; Marjorie K. Jeffcoat; Fraya Karsh; Sanford B. King; Brian L. Mealey; Roland M. Meffert; James T. Mellonig; Myron Nevins; Steven Offenbacher; Gary M. Reiser; Louis F. Rose; Paul R. Rosen; Cheryl L. Townsend (Chair); S. Jerome Zackin.

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline. It is an update of a previously issued document (Parameters of care. Chicago (IL): American Academy of Periodontology; 1996 Oct. 46-50 [16 references]).

This publication has been edited to reflect decisions by the Board of Trustees in approving the term "periodontal maintenance" in lieu of "supportive periodontal therapy" (January 2000) and a new classification of periodontal diseases, as published in the Annals of Periodontology, December 1999; Volume 4, Number 1 (April 2000).

An update is not in progress at this time.

GUIDELINE AVAILABILITY

The complete set (13 parameters) of the American Academy of Periodontology Parameters of Care can be downloaded from the Academy's Web site. An Adobe Acrobat Reader is required to download the publication.

To access the Academy's Web site, go to www.perio.org. To access a copy of the Parameters of Care, go to www.perio.org/resources-products/pdf/parameters.pdf.

AVAILABILITY OF COMPANION DOCUMENTS

This is one of 13 practice parameters available in the American Academy of Periodontology Parameters of Care. This journal supplement includes a Foreword and an Overview.

To access the Academy's Web site, go to www.perio.org. To access a copy of the Parameters of Care, go to www.perio.org/resources-products/pdf/parameters.pdf.

PATIENT RESOURCES

None available

NGC STATUS

This is an update of a previously issued summary that was originally completed by ECRI on March 25, 1999, was verified by the guideline developer on April 26, 1999, and was published to the NGC Web site in May 1999. The updated summary was verified by the guideline developer as of October 17, 2000.

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